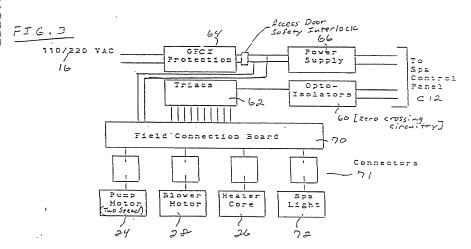
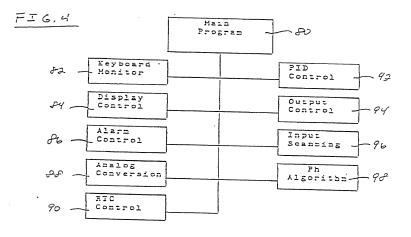


and the said





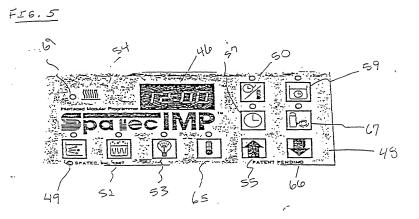


FIG. 6 - Overall flow or con	ntrol	
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; ;	m 7	
: initialization : ~/(		
-	interrupts .	napied
5-104	timer ~104	interrupt /108
: : main !rogram :	الر	
	i roll :	: 5 M T T P
***	11	
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## FIG.7

Temp = Desired temperature of Spa water

Temp, = Temperature at First Sensor (S,)

Temps = Temperature at Second Sensor (52)
Tamps = Temp, - Temps

'Di' = Limit of acceptable temperature difference (plus or minus).

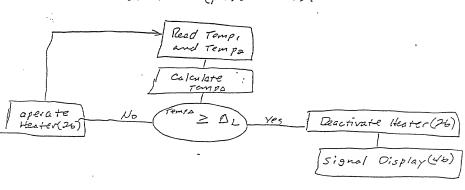


FIG. 8

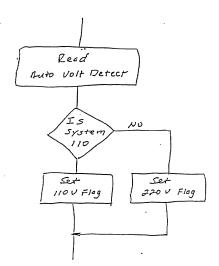


FIG. 9 Rate of Heating Rate of Heating ( average) Raten= Temp = = asired temperature of Spa water Initial temperature of spa water TempI = Tempf - TempI Time (initial) Time I = Time = = Time (final) Timer - Timer Times= Read Temps 16 Read Time Activate Heater (26) Continue Temp = No Yes ·Colculate Times Calculate RateAv Store Rate

Temps = Initial temperature of Spa water

Temps = Final remperature (desire) of Spa water

Temps = Temps - Temps

Rate = Rate of Heating

Rater = Rate of Heating (average)

Times = Initial time

Times = Final time

Times = Times - Times

